

6. "On the Flowering of Plants, &c., in the Isle of Wight," by Dr. T. Bell Salter.

7. "List of Plants in flower, in the open air, in the neighbourhood of Ryde, Isle of Wight, in November 1855," by Dr. T. Bell Salter.

MISCELLANEOUS.

On the Earliest Stages in the Development of Pelagia noctiluca.
By Dr. A. KROHN.

IN the December number of Müller's 'Archiv,' Dr. A. Krohn has given a remarkable positive proof of the existence amongst the *Medusæ* of a direct reproduction, without that intervention of polype-like gemmiparous forms which constitutes what is called the "alternation of generations" in these animals. This mode of reproduction appears to be of exceedingly rare occurrence in the *Medusæ*. It has hitherto been observed only in two species besides the *Pelagia noctiluca*; namely in *Æginopsis mediterranea* (by Müller), and in *Trachynema ciliatum* (by Gegenbaur). After repeatedly observing young *Medusæ*, which, from their general characters, appeared to belong to the genus *Pelagia*, the author, in the winter of 1853-54, met with individuals in a more advanced state, which proved that they were the young of the common Mediterranean *P. noctiluca*; and as in their earlier stage they agreed perfectly with the young of *Medusa aurita*, which had not long been detached from their polype-like nurses, he naturally concluded that *Pelagia noctiluca* did not differ essentially in its mode of reproduction from the other *Medusidæ*. Subsequently, however, Dr. Krohn met with individuals in a far lower stage of development, the youngest of which were of such simple structure that it appeared to him they could not be far from the embryonic state, and he therefore considered it important to ascertain in what form the embryo quitted the egg. With this view he examined numerous females without success, and was therefore compelled to have recourse to artificial impregnation. His first attempts failed, but in the month of April he succeeded in his object. Segmentation commenced in the ova within a few hours after impregnation, and the first free embryo was seen in the thirty-second hour.

The embryos exhibited an unexpected form. They were always considerably elongated, sometimes oval or oblong, sometimes very long, slender, and cylindrical. They measured from $\frac{1}{2}$ to 1 millim. in length; the anterior extremity is closed and rounded, whilst the other appears more or less truncated, and exhibits an extremely small round opening (the mouth), which leads into a well-marked roundish cavity (the stomach), occupying the hinder third of the body. The embryos appear semitransparent, in consequence of a delicate whitish coat, which covers the limpid substance of the body. This is closely set with fine short cilia, by the action of which the little creatures

swim pretty rapidly, with a constant rotation upon their longitudinal axis.

The development of the embryo takes place by a gradual widening of the hinder part, which thus acquires a bell-like form, the stomach becomes much larger, and the oral orifice, which was depressed in the embryo, becomes considerably protruded. On the third day, the hinder margin of the bell-shaped umbrella exhibits eight small rounded lobes, at the same time that eight corresponding appendicular sacs are developed from the stomach. Shortly afterwards the marginal lobes increase considerably in length, and acquire a somewhat quadrangular form, with their margins slightly indented; and at these indentations the rudiments of the marginal corpuscles (*ocelli*) make their appearance. At this stage the mouth has become much larger, and makes its appearance at the extremity of a short tubular process,—the rudimentary stalk of the four arms possessed by the perfect animal. The motion of the young animal through the water is slower than at first; but it is still principally effected by the action of cilia, although the umbrella occasionally expands and contracts, producing an undulation of the marginal lobes.

The further progress of the young *Medusa* to the condition in which Dr. Krohn first observed it, consists in the growth of the marginal lobes, and especially of the lappets into which they are divided by the central indentation, the disappearance of the cilia, the appearance of crystalline bodies in the marginal corpuscles, the greater development of the base of the oral tentacles, and the diminution of the height of the umbrella. At this period also the whitish coat of the embryo disappears, whilst the urticating organs are developed.

The author followed the further development of the young *Pelagia* until it had acquired the eight additional ventricular sacs characteristic of the mature animal and the eight marginal tentacles; but he observes, that four of these had attained a length equal to the diameter of the disk, whilst the other four were still rudimentary. The stalk of the oral arms was longer and larger, but the arms themselves were but slightly developed.—W. S. DALLAS.

DESCRIPTION OF A NEW SPECIES OF SWIFT.

CYPSELUS GALILÆENSIS, Antinori.

C. cauda brevissima, subfurcata: corpore nigro-virescente, nitore metallico perlucido: fronte dilute albida: gula et regione supra-caudali albis: pognio externo primæ remigis albo limbato.

The third part of last year's 'Naumannia' contains a communication from the Marchese Oratio Antinori, describing this "apparently new Swift," which was discovered by him in Palestine, on the borders of the Sea of Galilee. Two specimens were procured,—*Cypselus apus* and *C. melba*; and *Hirundo daurica, rupestris* and *rustica* were breeding abundantly near the same locality. Its similarity to a South African species (*C. leucorrhous*, Steph. ex LeVaill. Ois. d'Afr. pl. 244. fig. 2) is commented upon; but it is hardly probable that it